CLAIMS

1. A method of screening for a modulator of angiogenesis comprising:

(a) contacting a first biological sample capable of undergoing angiogenesis with an ECM signaling molecule and a suspected modulator;

(b) contacting a second biological sample with an ECM signaling molecule; and

(c) comparing the level of angiogenesis resulting from step (a) and from step (b), whereby a modulator of angiogenesis is identified by its ability to alter the level of angiogenesis when compared to step (b),

wherein said ECM signaling molecule is a biologically effective amount of CCN3 or a fragment, variant, analog, homolog or a derivative thereof.

2. The method of claim 1 wherein the biological samples of steps (a) and (b) are also contacted with one or more CCN polypeptides selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6, or a fragment, variant, analog, homolog or derivative of said one or more CCN polypeptides.

3. A method of screening for a modulator of angiogenesis comprising:

(a) implanting a first implant comprising an ECM signaling molecule and a suspected modulator in a first cornea of a test animal;

(b) implanting a second implant comprising an ECM signaling molecule in a second cornea of said test animal;

(c) comparing the development of blood vessels from step (a) and step (b), whereby a modulator of angiogenesis is identified by its ability to alter the level of blood vessel development in step (a) when compared to the blood vessel development in step (b).

wherein said ECM signaling molecule is a biologically effective amount of CCN3 or a fragment, variant, analog, homolog or a derivative thereof.

4. The method of claim 3 wherein the implants of steps (a) and (b) further comprise one or more CCN polypeptides selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6, or a fragment, variant, analog, homolog or derivative of said one or more CCN polypeptides.

5. A method of screening for a modulator of oncogenesis comprising:

(a) administering an ECM signaling molecule and a suspected modulator to a first tumor;

(b) administering an ECM signaling molecule to a second tumor; and

(c) comparing the level of oncogenesis resulting from step (a) and from step (b), whereby a modulator of oncogenesis is identified by its ability to alter the level of oncogenesis when compared to step (b),

wherein said ECM signaling molecule is a biologically effective amount of CCN3 or a fragment, variant, analog, homolog or a derivative thereof.

6. The method of claim 5 wherein the tumors of steps (a) and (b) are also administered one or more CCN polypeptides selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6, or a fragment, variant, analog, homolog or derivative of said one or more CCN polypeptides.

7. A method of screening for a modulator of cell adhesion comprising:

(a) adding an ECM signaling molecule and a suspected modulator to a first biological sample on a surface compatible with cell adherence;

(b) adding an ECM signaling molecule to a second biological sample on a surface compatible with cell adherence; and

(c) comparing the levels of cell adhesion measured in step (a) and step (b), whereby a modulator of cell adhesion is identified by its ability to alter the level of cell adhesion when compared to step (b),

wherein said ECM signaling molecule is a biologically effective amount of CCN3 or a fragment, variant, analog, homolog or a derivative thereof.

8. The method of claim 7 wherein the biological samples of steps (a) and (b) are also administered one or more CCN polypeptides selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6, or a fragment, variant, analog, homolog or derivative of said one or more CCN polypeptides.

9. A method of screening for a modulator of cell migration comprising the steps of:

(a) seeding cells capable of undergoing cell migration onto a first gel matrix comprising an ECM signaling molecule and a suspected modulator;

(b) seeding cells capable of undergoing cell migration onto a second gel matrix comprising an ECM signaling molecule; and

(c) comparing the levels of cell migration measured in step (a) and step (b), whereby a modulator of cell migration is identified by its ability to alter the level of cell migration when compared to step (b),

wherein said ECM signaling molecule is a biologically effective amount of CCN3 or a fragment, variant, analog, homolog or a derivative thereof.

10. The method of claim 9 wherein the matrixes of (a) and (b) further comprise one or more CCN polypeptides selected from the group consisting of CCN1, CCN2, CCN4, CCN5

and CCN6, or a fragment, variant, analog, homolog or derivative of said one or more CCN polypeptides.

11. A modulator identified by any one of the methods according to claims 1-10.

12. A pharmaceutical composition comprising a modulator according to claim 1 and a pharmaceutically acceptable adjuvant, diluent, or carrier.

13. An isolated peptide that modulates the binding of CCN3 to an integrin selected from the group consisting of $\alpha_v\beta_3$, $\alpha_5\beta_1$ and $\alpha_6\beta_1$, or a variant, analog, homolog or derivative of said peptide.

14. A pharmaceutical composition comprising a peptide according to claim 13 and a pharmaceutically acceptable adjuvant, diluent, or carrier.

15. The composition of claim 14 further comprising one or more peptides that modulate the binding of a CCN polypeptide to an integrin, or a variant, analog, homolog or derivative of said one or more peptides, wherein said CCN polypeptide is selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6.

16. The composition of claim 15 wherein the CCN polypeptide is CCN1.

17. The composition of claim 16 wherein the integrin is selected from the group consisting of $\alpha_6\beta_1$, $\alpha_M\beta_2$, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_{II}\beta_3$ and $\alpha_6\beta_1$.

18. The composition according to any one of claims 14-17, wherein the peptide comprises amino acids from SEQ ID NO: 1 selected from the group consisting of 1-5, 3-7, 6-10, 8-12, 11-15, 13-17, 16-20, 18-22, 21-25, 23-27, 26-30, 28-32, 31-35, 33-37, 36-40, 38-42, 41-45, 43-47, 46-50, 48-52, 51-55, 53-57, 56-60, 58-62, 61-65, 63-67, 66-70, 68-72, 71-75, 73-77, 76-80, 78-82, 81-85, 83-87, 86-90, 88-92, 91-95, 93-97, 96-100, 98-102, 101-105, 103-107, 106-110, 108-112, 111-115, 113-117, 116-120, 118-122, 121-125, 123-

127, 126-130, 128-132, 131-135, 133-137, 136-140, 138-142, 141-145, 143-147, 146-150, 148-152, 151-155, 153-157, 156-160, 158-162, 161-165, 163-167, 166-170, 168-172, 171-175, 173-177, 176-180, 178-182, 181-185, 183-187, 186-190, 188-192, 191-195, 193-197, 196-200, 198-202, 201-205, 203-207, 206-210, 208-212, 211-215, 213-217, 216-220, 218-222, 221-225, 223-227, 226-230, 228-232, 231-235, 233-237, 236-240, 238-242, 241-245, 243-247, 246-250, 248-252, 251-255, 253-257, 256-260, 258-262, 261-265, 263-267, 266-270, 268-272, 271-275, 273-277, 276-280, 278-282, 281-285, 283-287, 286-290, 288-292, 291-295, 293-297, 296-300, 298-302, 301-305, 303-307, 306-310, 308-312, 311-315, 313-317, 316-320, 318-322, 321-325, 323-327, 326-330, 328-332, 331-335, 333-337, 336-340, 338-342, 341-345, 343-347, 346-350, 348-352, 351-355, 353-357.

19. The composition according to any one of claims 14-17, wherein the peptide comprises amino acids from SEQ ID NO: 1 selected from the group consisting of 1-10, 6-19, 11-20, 16-29, 21-30, 26-39, 31-40, 36-49, 41-50, 46-59, 51-60, 56-69, 61-70, 66-79, 71-80, 76-89, 81-90, 86-99, 91-100, 96-109, 101-110, 106-119, 111-120, 116-129, 121-130, 126-139, 131-140, 136-149, 141-150, 146-159, 151-160, 156-169, 161-170, 166-179, 171-180, 176-189, 181-190, 186-199, 191-200, 196-209, 201-210, 206-219, 211-220, 216-229, 221-230, 226-239, 231-240, 236-249, 241-250, 246-259, 251-260, 256-269, 261-270, 266-279, 271-280, 276-289, 281-290, 286-299, 291-300, 296-309, 301-310, 306-319, 311-320, 316-329, 321-330, 326-339, 331-340, 336-349, 341-350, 346-357.

20. The composition according to any one of claims 14-17, wherein the peptide comprises amino acids from SEQ ID NO: 1 selected from the group consisting of 1-15, 8-22, 16-30, 23-37, 31-45, 38-52, 46-60, 53-67, 61-75, 68-82, 76-90, 83-97, 91-105, 98-112, 106-120,

113-127, 121-135, 128-142, 136-150, 143-157, 151-165, 158-172, 166-180, 173-187, 181-195, 188-202, 196-210, 203-217, 211-225, 218-232, 226-240, 233-247, 241-255, 248-262, 256-270, 263-277, 271-285, 278-292, 286-300, 293-307, 301-315, 308-322, 316-330, 323-337, 331-345, 338-352, 346-357.

21. An antibody that modulates the binding of CCN3 to an integrin selected from the group consisting of $\alpha_v\beta_3$, $\alpha_5\beta_1$ and $\alpha_6\beta_1$, or a variant, analog, homolog or derivative of said peptide.

22. A pharmaceutical composition comprising an antibody according to claim 18 and a pharmaceutically acceptable adjuvant, diluent, or carrier.

23. The composition of claim 19 further comprising one or more antibodies that modulate the binding of a CCN polypeptide to an integrin, wherein said CCN polypeptide is selected from the group consisting of CCN1, CCN2, CCN4, CCN5 and CCN6.

24. The composition of claim 20 wherein the CCN polypeptide is CCN1.

25. The composition of claim 21 wherein the integrin is selected from the group consisting of $\alpha_6\beta_1$, $\alpha_M\beta_2$, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_{II}\beta_3$ and $\alpha_6\beta_1$.

TABLE 1. Effects of CCN3 on corneal neovascularization

	Vascularized (+) and unvascularized (-) corneas	
Test substance	+	-
CCN3	13	1
bFGF	7	1
CCN3 buffer	0	7
CCN3 + anti-CCN3 antibodies	0	8

Hydron pellets containing CCN3 storage buffer, CCN3 (300 ng), bFGF (50 ng), or CCN3 preincubated with anti-CCN3 antibodies (400 ng) were implanted into rat corneas. Corneal vascularization was scored after 7 days.